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ABSTRACT

The fundamental concern of the roundtable on which this essay is based was the world of scholarship's ability to sustain and develop a system of scholarly communication that makes individual contributions to the knowledge base broadly accessible for judgment within and among the academic disciplines. The focus was on the disciplines that have traditionally made the library, as opposed to the laboratory, their home. Society has come to value the products of the sciences more highly than those of the humanities and social sciences. Scholarly publication, whether digital or print, is a complex process that involves a range of players. This essay makes some suggestions for the dissemination of scholarly work, including broadening the conception of the audience, that scholarly work in the humanities and the social sciences should address. The potential for technology to expand those who can benefit from scholarly materials and the materials that can be made available should be explored. The essay calls for the preservation of peer review, increased partnerships among different stakeholders, better education about copyright and related issues, and new models for meeting the costs of scholarly communication and publication. (SLD)

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It is now commonplace to observe just how fractured the world of scholarship has become. What modern scholars pursue, how they conduct those pursuits, and the means by which they communicate their findings now vary so widely that the academy's basic organizing principles seem in jeopardy. Differences of both perception and circumstance divide those who conceive of the academy as a setting for scholarly inquiry and interpretation, and those who conceive of it as a place for the scientific pursuit of knowledge. Even the notion that scholarship should result in findings with eventual practical application has become, in some quarters, another illustration of how the contemplative arts have been transformed into a production function catering principally to the dictates of science and finance.

The March 1998 issue of *Policy Perspectives*, "To Publish and Perish," provided one indication of how deep and painful those fault lines have become. That essay, based on a roundtable in conjunction with the Association of Research Libraries and the Association of American Universities, had outlined several causes of and proposed solutions to the phenomenal increase in the cost of scholarly publication. Its central recommendation was that the process of print publication be severed from the process of academic review for the purposes of granting tenure and approving promotions. To the surprise of no one, that perspective occasioned considerable debate and controversy, though not in a form that the original roundtable, which included substantial representation from the social sciences and humanities, had expected. That issue of *Policy Perspectives* went on to suggest that the academy's scholarly societies and disciplinary organizations in scientific, medical, and technical fields take the lead in creating systems of quality certification for research published electronically. The essay argued that those organizations were in the best position to reduce the near stranglehold that for-profit publishers of scientific journals had come to exercise over the dissemination of research findings—the apparent root cause of the steepest price escalations.

And there is the rub. For-profit publishers have not acquired the same share of the humanities and social sciences market for scholarly publications as they have in the fields of science, medicine, and technology. Many journals in the humanities and social sciences are still owned and operated by non-profit organizations—major disciplinary societies, smaller scholarly societies focusing on a specialized field, offshoots of university presses, or state-supported organizations established to promulgate scholarship in a particular field. While these organizations have never sought revenue as an end in itself, they are compelled to cover the costs of their own operations, even as the subsidies they once received have been reduced or eliminated. In recent years, these scholarly organizations have been forced repeatedly to raise subscription prices to meet their own growing production costs. In doing so, they have been subject to criticism of the same kind and intensity as that which the academy has leveled against commercial publishers.

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More to the point, many in the humanities and social sciences saw in "To Publish and Perish" a view of scholarship that takes as its model the fields of scientific and technological research, which are organized around the empirical testing and replication of findings. To be sure, these are also the characteristics of substantial parts of the social sciences whose research methodologies are closely aligned with those of the natural sciences: for example, most aspects of economics and psychology, as well as those areas of political science rooted in the mathematics of game theory.

Scientific research is deliberately cumulative and immediate in its impact. Investigators in these fields depend directly on one another's data and findings, even as they compete to advance the state of knowledge. The need for expediency has helped make the scientific article the staple unit of expression in these fields, while helping to secure digital publication as an increasingly preferred mode of dissemination.

Within almost all of the humanities and many of the social sciences, however, the concept of academic inquiry often extends more broadly and entails consideration of a greater range of evidence than in scientific investigation. For this reason, the unit of expression tends to be longer than the scientific article, and the scholarly monograph has proven to be remarkably well-suited as a vehicle for scholarly dissemination. It is not just that humanists celebrate books as objects of art important in their own right, though that has proven to be an important element in the story, but that scholarly work in the social sciences and humanities is of a different kind and hence requires a different kind of communication—one that traditional print publication has served well.

To paraphrase the musical *Oliver*, then, we were being asked to review the situation—to see if, by thinking it out again, we might not come to a different set of conclusions regarding the dissemination of scholarly results in the humanities and social sciences. Once more in partnership with the Association of Research Libraries, in conjunction this time with the National Humanities Alliance, and with funding from the National Endowment for the Humanities, we convened a national roundtable to explore the nature of scholarly dissemination in an era of rising costs and changing technologies. Could colleges and universities, we asked, ensure that an effective and efficient medium of scholarly exchange continues to exist for those disciplines that have traditionally made the library—as opposed to the laboratory—their home? As the cost of publishing high-quality electronic products rises and the cost of acquiring published materials continues to outpace the growth of library budgets—and as library budgets are increasingly strained by subscriptions to science, technology, and medical journals produced by for-profit enterprises—how can those disciplines that are rooted in a non-profit ethos sustain their vitality?

Can colleges and universities ensure that an effective and efficient medium of scholarly exchange continues to exist for those disciplines that have traditionally made the library—as opposed to the laboratory—their home?

Again to no one's surprise, the ensuing conversation was intense, at times contentious, and, in the end, fundamentally revealing. Reflecting the predilections of the humanists and social scientists thus assembled, we talked about ends more than means—about the purposes of discourse and discovery, and only subsequently about the dissemination of results. In the fields that were the primary focus of "To Publish and Perish," principally science, medicine, and technology, the issues were really ones of access, cost, and control. While these concerns matter to humanists and social scientists, they are often overshadowed by the more central issues of audience, style, and purpose.

Underpinnings of Strain

Our roundtable's fundamental concern was the academy's ability to sustain and develop a system of scholarly communication that makes individual contributions to the knowledge base broadly accessible for judgment both within and among the academic disciplines. For much of the past century, it has been possible for the different stakeholders in the academic publication process, humanists as well as scientists, engineers as well as social scientists, to regard themselves as partners in a shared system of scholarly dissemination. Individual faculty members and scholarly societies, regardless of discipline, along with academic journals, university presses, and university libraries,

by and large understood themselves as linked by a common set of values and purposes, each with a specific role in producing, evaluating, disseminating, indexing, and archiving scholarly knowledge.

Several decades of changes, both inside and outside the academy, have now strained this alliance. At the core of these tensions is a dramatically altered conception within society itself about the value of research and scholarship in different fields. One might say that in the academy's founding vision the humanities and scientific fields were linked together by a common goal: to discover the truth about everything, and to contribute to the betterment of society through the pursuit of knowledge of all kinds. The societal tendency through the latter half of the twentieth century, however, has been to distinguish between kinds of knowledge—and to value the practical advances in science, medicine, and technology over scholarship in such areas as literature, languages, history, philosophy, politics, and art. This societal preference has placed higher education institutions in a difficult position. As recipients of considerable subsidies from federal agencies for scientific research, universities and colleges face a dilemma caused by the bifurcation of their faculty into essentially two groups—one of which has recourse to major external support, and the other of which does not. The fact that scientific investigation is inherently more expensive than humanities and social sciences scholarship does little to assuage the circumstantial differences between these two groups, and the perceptual differences which often lead to mutual misunderstandings and resentments.

Adding to the strain of the late 1960s and '70s was the fact that universities and scholarly societies relinquished many of the managerial and production functions of journal publishing in the natural and applied sciences to for-profit publishers. In the more recent past, changing technology and the rapidly growing subscription prices of journals controlled by for-profit publishers have set the academy's traditional partners increasingly at odds with one another. Faculty members in the humanities and social sciences often feel betrayed by the inability of their campus libraries to maintain currency in their fields. Though the proportion of university library budgets devoted to book acquisition and journal subscription has remained steady throughout the past decade, scholars in all fields have seen the buying power of those budgets erode in the face of rising prices. However hard institutions and their libraries may work to distribute evenly the pain of limited means, many scholars in the humanities and social sciences believe that acquisition funds have migrated away from publications in their own fields to meet the escalating cost of electronic and print journals in the natural and applied sciences.

The very enhancements to infrastructure and equipment that make electronic publication feasible in the scientific fields have been heavily subsidized through the federal government's investment in scientific research; the humanities, in comparison, have received little federal support for the development of new modes of scholarly expression. Some fear that the very idiom of research in the sciences, medicine, and technology, with its emphasis on expediency of dissemination, may overshadow a more reflective model of scholarship in which publication is the result of an individual scholar's work to develop, extend, or refine the state of thinking in a particular subject. In the con-

Society's tendency throughout the latter half of the twentieth century has been to value the practical advances in science, medicine, and technology over scholarship in literature, languages, history, philosophy, politics, and art.

strained economics of scholarly publishing, faculty in the humanities and social sciences have found it increasingly difficult to find print venues for scholarship that makes significant contributions to specialized areas of inquiry. The ultimate anxiety is that the humanities and social sciences will be permanently devalued within the academy.

Scholarly societies in the social sciences and humanities, along with their predominantly faculty memberships, find themselves similarly disadvantaged by the modern economics of academic publishing. Most of these societies publish their field's major journals and distribute them as a benefit of membership. While societies vary in their degree of dependence on institutional subscriptions, these nonprofit publishers operate on small margins that make it difficult to absorb any drop in revenue. As university and college libraries close budgetary shortfalls by canceling subscriptions to some journals, these societies can easily find themselves in a position of raising fees

to recoup revenues lost from those cancellations, causing membership levels to decline.

The circumstances of university presses, the second mainstay of publication in the social sciences and humanities, differ very little from those of the scholarly societies. As the real purchasing power of libraries declines, these presses face reductions in the sale of scholarly monographs, which tend more often to be the medium of expression for scholars in the humanities and social sciences. While university presses have always operated with a concern for costs, the support of their home universities has allowed them to pursue a mission of providing access to important scholarly information and thought that might not otherwise find a vehicle for dissemination; this mission has made it possible for academic presses to publish titles whose contributions to knowledge in a given field often outweigh their market appeal. In recent years, however, university presses have experienced substantial reductions in support from their home institutions. Increasingly they find themselves evaluated by their bottom lines—the same metric that guides for-profit publishers in their choice of titles and markets. This situation leads all too readily to two related outcomes: University presses are pressured to increase the number of books with broader market appeal, which diverts energy and resources from the publication of scholarly monographs. At the same time, these presses find it necessary to increase the prices of scholarly monographs in order to recover more of their front-end costs, which often leads to reduced sales, not just to libraries but also to individual scholars, and thus to additional increases in monograph prices.

Changing technology and the rapidly growing subscription prices of journals controlled by for-profit publishers have set the academy's traditional partners increasingly at odds with one another.

All of these players face a horizon of growing costs and constrained means; observing the rapid changes occurring in scholarly communication, each feels the need to take proactive steps to ensure its continued vitality, knowing that it lacks the resources to do all it envisions.

Stepping Forward, Standing Firm

Beyond the financial impediments to innovation, there is a strong cultural attachment to the printed page among scholars in these disciplines. Two stories told in the course of our roundtable discussions exemplify the dilemmas of scholarship in a world of markets and technology. The first grew out of the historic tension, newly rekindled by the increasing importance of the market in the distribution of financial resources, between the academy's need to reach out to a wider public audience and the individual scholar's need to specialize. For the humanities and social sciences that tension is further exacerbated by the general conviction that scholarly work must appear in print no matter how specialized its intended audience. The illustration that was offered was the response to the *American Political Science Review*'s proposal to adopt a bi-fold approach to its publication. The concept was to begin publishing works that appealed primarily to specialized interests in a digital format, retrievable from the journal's Web site, while the society's print journal would contain works addressed to a broader and more general readership. This proposal occasioned a revolt among senior scholars in the field. As it turned out, almost no one was willing to entertain the thought that his or her research might be of too particular a focus to appear in the association's major print publication—by everybody's definition an "A" journal in the tenure and promotion sweepstakes. There was concern that few if any scholars would want to read articles published exclusively in digital format, and an even greater fear that work published in one age of technology could later become obsolete, thus compromising the ability to archive a given work for future generations.

The second story suggests that some tensions can be resolved if the financial incentives are strong enough and the scholars who want their work disseminated persistent enough. Though not known for their entrepreneurial muscle, university libraries are beginning to venture into on-line publishing—a domain that financial and cultural barriers have prevented university presses from pursuing in a sustained way. The University of Wisconsin Library, for example, has developed its Web site to serve also as a venue of publication for scholarly works, ranging from a reproduction of *Chambers's Book of Days* to a modern scholarly edition of the works of the Icelandic poet Jónas Hallgrimsson. Such projects underscore the fact that the electronic medium affords opportunities for scholarship

beyond what print publication in itself can provide. In addition to English translations of the poetry with scholarly notes and commentary, this on-line edition of Hallgrimsson's works includes images of all surviving manuscripts, maps and photographs, and sound recordings of the poetry and songs. This material will remain on the Library's Web site even after the University of Wisconsin Press publishes an abbreviated version of this scholarly edition. Not everyone agrees that this approach can provide a financially feasible solution to the challenges of scholarly publication, though nearly all would agree that it points the discussion in the right direction.

The University of Wisconsin Library's ventures with electronic publication speak as well to the more general questions of public perception and audience in an age of digital technology. It is not that scholars in the social sciences and humanities reject the tools of technology. Quite the contrary: The conversion of standard bibliographies and indices to digital form has greatly enhanced the speed and power of any literature search, in these fields no less than in others. Manuscripts, visual images, and musical scores converted into digital form make it possible for scholars to study rare and original materials that may be physically housed in libraries thousands of miles apart. Indeed, it is not uncommon for a scholar in these fields, equipped with a computer and modem link, to access the resources of the campus library, to research and write an entire article without physically entering the library facility. The use of e-mail and sharing of files have helped redefine the notion of scholarly community from groups of people clustered principally around a collection of books to international communities of scholars united by common research interests.

While they have made substantial use of the Internet's capacity to transform scholarly inquiry, scholars in the humanities and social sciences have been slower to adopt a vision that regards digital publication as a major channel of dissemination in its own right. One reason for this reluctance is the inherent difficulty in determining the quality and reliability of information from Internet sources. Another reason for the comparative lack of progress is the scarcity of funds available to these disciplines for experimentation in the new medium. It is the very magnitude and duration of their external subsidies that have made it easier for the natural and applied sciences to build alternative channels of publication and dissemination.

No scholar in the humanities and social sciences can fail to perceive the difference between the kind of external support provided to the scientific fields and that which the work in his or her own discipline attracts. One conceivable response is to undertake a broad and concerted effort to heighten the recognition and societal value accorded to work in one's own field. Through the past two decades, the scientific disciplines have proven remarkably successful in building public support for research in apparently inscrutable domains, deploying the popular media to help communicate both the excitement and value of scientific discovery. The humanities and social sciences are also taking important steps in this direction. One example is "What's the Word?"—a weekly program aired on National Public Radio and sponsored by the Modern Language Association (MLA)—which presents the work of scholars in the fields of languages and literature. Since its inception in 1997, more than 400 MLA scholars have contributed to the program, which is estimated to reach some 1.6 million listeners in the United States and abroad. The work of humanities and arts councils within the states, as well as numerous programs in which historians work with museums and the National Park Service, exemplify the range of efforts to reach out and cultivate a broad base of public support for scholarship in the humanities and social sciences.

In spite of these efforts, a recurrent perception both in and beyond the academy is that scholars in the humanities often overlook opportunities their works would naturally afford to communicate with others beyond their own circle. There are many who find that scholars, particularly in the humanities, come to exhibit a sense of ironic resignation and detachment that informs both their scholarship and their interaction with other colleagues.

The feeling of playing a subordinate role is exacerbated by the solitary nature of scholarship in the humanities; this circumstance often results in humanities faculty feeling detached not just from the workings of society, but also from the activities of their home institutions, and even from one another. It is characteristic of every academic discipline to develop a mode of discourse and terminology that reflects its own scholarly premises, methods, and conceptions of evidence. Writing for other scholars in the field is the essence of peer review. Yet many of those who are the humanities' natural audience have reluctantly

concluded that scholarship in these fields too often overlooks or ignores opportunities to address a broader audience beyond the realm of specialists. Administrators sometimes find that it is harder to encourage faculty members in the humanities to collaborate as a team—for example, in the development of proposals that would involve individual faculty members working together in pursuit of a larger shared vision. Individual departments occasionally become intellectual fiefdoms or else battlefields in which different faculty are at odds with one another.

It may well be that this image of isolation and defensiveness applies to only a small proportion of humanities scholars and practitioners, and to an even smaller segment within the social sciences. It is nonetheless an image that persists in the mind of the public and of many in the academy itself.

Expanding the Audience

From this perspective, what dissemination strategies and investments in the humanities and social sciences ought to pursue are broader purposes and a more public style. In this respect, the humanities in particular ought to enjoy a comparative advantage. Millions of Americans are patrons of bookstores and museums, as well as theatrical and musical organizations. A considerable share of the American public finds meaning and fulfillment in the arts and humanities. The degree of interest that the public exhibits for work in these fields represents the potential for considerably expanded economic as well as political support for scholarship in the humanities. Scholars in the humanities and social sciences have a special opportunity—some would say a special obligation—to engage the broader public in the questions they pose and address.

While the scarcity of funds may help account for the hesitation to cultivate a broader audience and develop new modes of communication in the humanities and social sciences, many perceive that there is a deeper cultural reluctance within these fields to acknowledge the full potential of the digital medium as a major channel of scholarly publication. The ambivalence can be seen most clearly in the attitudes and behaviors surrounding the tenure and promotion bids of junior professors. In a time that calls on scholars in these fields to expand support for their work, what is most highly rewarded at the junior level is scholarship that speaks predominantly to the interests of specialists. In addition to their need to produce what Ernest Boyer called the "scholarship of new discovery," young scholars know that a successful career demands that their work be published primarily, if not exclusively, in the form of printed scholarly articles or monographs. University presses that seek to commission a general interest book often experience difficulty attracting capable junior scholars to the project.

The scholarship of young faculty may very well draw extensively on images and other material obtained through the Internet, and an electronic medium may often prove to be the most suitable venue for communicating one's thoughts about these matters. Given the choice between this medium and a traditional print journal, however, young scholars know that their portfolio is weakened if they abandon the high road of print. A growing number of younger scholars are investing time and energy in the development of Web sites as learning resources for their students. By and large, however, untenured faculty members know that these efforts have less weight in the evaluation of their scholarly promise. While liberal arts colleges and other institutions that pay close attention to a faculty member's teaching accomplishments may be more receptive to scholarship of this type, there are many other settings in which Web sites, textbooks, and other scholarly activities addressed to a more general audience are inferior currency in the pursuit of tenure and promotion.

Scholars in the humanities and social sciences have a special opportunity—some would say a special obligation—to engage the broader public in the questions they pose and address.

How might this world of scholarly publication change, becoming in the process not less scholarly, but less insular? Here two new ventures, one from history, the other from biology, suggest possible forms that solutions in the future might take. The History Cooperative, our first example, is the result of two scholarly societies—the American Historical Association, with its journal, *The American Historical Review*, and the Organization of American Historians,

publisher of the *Journal of American History*—joining together with the University of Illinois Press and the National Academy Press to develop electronic versions of these journals. While these associations retain control of the content and subscription price of their publications, the partnership with the two presses allows them to share the costs and risks of electronic publishing without entrusting content to a vendor who does not keep their interests in mind. Since the project's inception, a total of six journals have come to participate. The partners of the History Cooperative have not been deterred by the fact that most historians still prefer to read scholarship in printed form. Without abandoning print, these stakeholders understand that changing markets and the pervasiveness of digital technology create new and growing expectations about the services they should provide. Advancing together into the electronic domain, these players help to guard against being swept individually into the current without a rudder.

Our second example, though based in the sciences, nonetheless demonstrates the strength and promise that can result from partnerships. BioOne is an electronic database sponsored by more than a dozen major research libraries in conjunction with the American Institute of Biological Sciences, a group of 55 scholarly societies in the biological sciences. Another partner in this enterprise is the Scholarly Publishing and Academic Resources Coalition (SPARC), a project of the Association of Research Libraries that seeks to promote efficient and low-cost dissemination of scholarly work through digital as well as print media. The Allen Press, a producer of many scientific journals, is also a partner in this project. The BioOne database brings together in a single source the publications of all the participating societies. Libraries that subscribe to BioOne provide their patrons with a powerful research tool that allows access to electronic versions of all participating journals; as a result, faculty members have access to an expanded range of journals in their field. In addition to the pooling of experience and expertise in digital publishing, BioOne provides participating scholarly societies all the advantages that result from scaling up, enabling them to do things together that none could afford to do on its own. The scholarly societies receive an enhancement to their traditional revenue from library subscriptions to BioOne. The collaboration makes it possible for each participating journal to saturate its market more completely, bringing its publications to the attention of a greatly expanded set of readers and potentially expanding the number of subscribers.

Given the choice between electronic publication and a traditional print journal, young scholars know that their portfolio is weakened if they abandon the high road of print.

In some respects these two projects resemble the aggregation packages in digital format that for-profit publishers are marketing to research libraries. The difference is that non-profit producers' cooperatives apply the powers of technology to make scholarly information available under conditions that are more favorable to the academy: conditions that assure fair use, place incentives on extending rather than restricting the use that scholars make of published materials, and make material available without exorbitant transaction barriers. The services these cooperative ventures are developing are not free; indeed, each scholarly organization and journal is driven partly by the objective of increasing its own subscription base and revenue margin. To succeed in the long run, each venture will be challenged to develop a business model that takes full account of the cost of back office support as well as marketing, promotion, and customer service. But cooperatives of this sort put the question of venture capital in the hands of the academy rather than for-profit enterprise, helping to move the work of scholarship closer to the goal of enhanced access while maintaining both financial and editorial control of scholarly content.

The larger promise of these ventures is that they represent ways of increasing the public's access to scholarly information as well as the participating organizations' access to revenue and capital. Neither project in itself reduces the drift to specialization that often makes scholarly publication of less interest to even an informed public. But information made available in digital form becomes easier to package for audiences beyond the initial target—thus offering the prospect of greater access, public support, and financial reward.

Rewiring the Culture

In the face of changes occurring within both society and institutions, the primary values that scholars in the humanities and social sciences seek to uphold are not dramatically different from those of other academic disciplines. In simplest terms, these communities seek a system of disseminating scholarly work that achieves the following purposes:

- It must provide access to scholarly works, making the thinking and discoveries of individual scholars readily available to both present and future generations of readers with a minimum of transaction barriers.
- It must provide a means of conferring qualitative evaluation and judgment of the scholarly work undertaken.
- It must provide an efficient means of disseminating scholarly findings, one that achieves the greatest possible volume and distribution at the most reasonable cost.

We believe that a thoughtful and concerted effort to develop the digital medium as a venue of publication can help to achieve each of these purposes in the humanities and social sciences, no less than in the scientific fields. In addition, the conjoining of interests found in such projects as the History Cooperative and BioOne offers a model for the broader cultural shift that can give humanities and social sciences scholarship an increased presence and importance in society generally.

Scholarly publication is a complex process that involves a range of different players. The agents of action to which our recommendations are addressed include the leadership of colleges and universities, research libraries, university presses, the disciplinary organizations, and individual scholars.

Broaden the conception of the audience that scholarly work in the humanities and social sciences should address. A fundamental challenge confronting faculty in these disciplines is to adopt a more balanced and inclusive sense of the potential audience for scholarship in these fields. There will always be a place in the academy for the scholarship of new discovery, and it is natural that a substantial amount of scholarly work will exert its initial and greatest impact on other specialists in the field. To expect all scholarship in the humanities to address a general audience is to deny a prerogative enjoyed by practitioners of every other discipline: that is, to establish their own communities of discourse, and to address these communities in a style and terminology suited to their purposes. Yet the conception of scholarship in the humanities and social sciences should be broad enough to acknowledge and reward work addressed to those who have a more general interest in a subject. Institutions and their faculty must move beyond the disposition that considers a scholarly work addressed to a general audience—such as a textbook or the development of a Web site—to be inherently inferior as evidence of suitability for tenure or promotion.

Explore the potential of technology to help expand both the number of those who can benefit from scholarly materials in the humanities and social sciences and the kinds of material that can be made available to them. Despite the advances that the digital environment has already accorded, there remains a cultural resistance within many disciplines to acknowledge digital publication as a legitimate scholarly venue. Technology can be used not just to reach a larger scholarly audience, but to convey materials—such as original manuscripts, songs, and images—that cannot be reproduced in cost-effective ways in the print medium. Electronic publication can provide a venue for the dissemination of important scholarship concerning a highly specialized subject—the kind of work that might otherwise remain unpublished. At the same time, developing venues of electronic publication in conjunction with existing modes of print publication offers a means of expanding the size of the audience that the humanities and social sciences might address. There is no question that the lack of funding available to develop such alternatives has remained a major impediment to progress in this area. The Mellon Foundation stands almost alone as a major financial supporter of efforts to develop digital resources for scholarship in the humanities and social sciences; its Journal Storage Project, known as JSTOR, has greatly enhanced the ability of scholars to access and search journal articles in digital form, while helping libraries reduce the financial burden of journal storage and preservation. While an effort to expand the market for the work of these fields offers one source of increased revenue, scholarship in these fields cannot hope to launch a mature system of electronic publication without an increase in support from other sources.

In order to reap the full benefits of this technology, scholars in the humanities and social sciences must also come to recognize digital publication as a legitimate form of scholarly activity. A peer-reviewed article that appears in an electronic venue should be regarded in the same light as one that appears in print. Universities and colleges could accelerate this cultural shift by establishing policies declaring that peer-reviewed scholarly work in either venue is suitable for consideration in tenure and promotion decisions.

Preserve the centrality of academic peer review as a means of certifying quality. One of the most important considerations of any academic discipline is to retain control over the quality of work published within the field. The system of academic peer review that accompanies traditional print publication has proven to be a consistently reliable and constructive tool for ensuring quality. Among other things, peer review provides a system for certifying the perceived value of a given scholarly contribution. The fact of appearing in Journal A as opposed to Journal B tells readers something about the qualitative judgment conferred by other scholars in the field. In addition to the certification function, peer review plays an invaluable role in helping individual scholars refine and extend their thinking.

Part of the reluctance to embrace the digital medium is the seeming absence of any certification or branding convention. In the unfettered democracy of the Internet, anyone can be a publisher, and the profusion of information makes it hard to delineate the quality of individual works. It is clearly within the realm of possibility, however, to develop a branding system in the digital environment that works just as effectively as the conventions currently recognized through print journals. "To Publish and Perish" suggested that the disciplinary organizations in scientific, medical, and technical fields take the lead in creating systems of quality certification for research published electronically. The scholarly associations in the humanities and social sciences have equally important roles in creating systems of certification that apply to scholarly works published digitally.

Establish active and continuing partnerships that allow different stakeholders to benefit from one another's experience, expertise, and financial resources as changes in markets and technology recast the dynamics of scholarly publishing. Individual scholars, institutions, libraries, scholarly organizations, and university presses must recognize the need to work together in order to maintain control in an environment that is changing, spurred by the presence of for-profit enterprises operating in both print and digital media. Scholars and other stakeholders in the humanities and social sciences must work to overcome the comparatively small differences that often place them at odds with one another on issues of scholarly publication. The fundamental issue linking them together is the need to increase the sense of value that society itself accords to the work of the humanities and social sciences. In practical terms, the challenge is one of attracting funds to support scholarly exploration and publication in these disciplines. While the hope of achieving a level of funding commensurate with the financial subsidies accorded to the scientific, medical, and technical fields may not be feasible, a concerted effort among the humanities and social sciences could lead to a greater base of support than these disciplines currently receive. Ultimately the question is not whether, but how, the forces of evolving markets linked with technology will alter the once-familiar traditions of scholarly publication. In this environment, a strategy of simply clinging to a scenario of reduced means will ensure that transformations in the future will not hold the interests of academic scholarship in these fields as a priority.

Educate scholars about copyright and related issues. An important role that institutions, libraries, and disciplinary organizations can play is to educate scholars about factors influencing the assignment of copyright and ownership of intellectual property. New legislation, combined with other developments in licensing and contract law, database protection, and technological controls, will have a profound impact on scholars' ability to teach and share their research. Scholars need to understand the power they have to stipulate what rights to retain, including the right to use their own published work with students and colleagues. Institutions might also urge their faculty members to avoid publishers that seek to charge exorbitant fees for access to published material.

Consider new models for meeting the costs of scholarly communication and publication. In an environment in which both the volume of scholarship and the cost of publication continue to grow, all stakeholders must work to achieve a distribution of costs that does not place an undue burden on any one member of the scholarly circle. One proposal, for example, has

been to create a system in which the cost of publishing a given journal is allocated to individual universities and colleges according to the degree in which their own faculty members publish in that journal. In this model, the major research universities would contribute disproportionately to the cost of publishing journals, and the expenditures an institution makes would be understood as part of its investment in the research infrastructure that supports the work of its faculty. The point here is not to advance a specific model but to engage in a continuing discussion of how to maintain control and meet the costs of scholarly publication in a rapidly changing environment.

Broadening the Base

As an intellectual foundation of the academy and a central agent in fostering human values, the potential of the humanities and social sciences to contribute to the continued strength and well-being of society is as great as ever. In order to realize this potential, however, all members of the scholarly community will find it necessary to adapt to a changing environment.

In most institutions of higher education there is a culture of skeptical resistance and even opposition to visions of change advanced by administrators as well as by faculty leadership. Yet there are pockets of initiative among scholars in the humanities and social sciences that are moving forward in their use of new technology to reshape the nature of scholarship, despite the inertia that characterizes many of their colleagues. For example, faculty in history at the University of Virginia have created a Web site of Civil War primary resources and reference tools called "The Valley of the Shadow"; a faculty member at the University of Rochester is Director of the Blake Archive, a site that brings together images and texts that facilitate scholarly analysis of William Blake's work; the Center for History and New Media at George Mason University sponsors one of the few efforts to experiment with the impact of new media on scholarship in the humanities; and a professor at Tufts University has developed the Perseus project, an array of primary sources and reference tools supporting the study of the ancient world. Project Muse at Johns Hopkins University is one of the earliest efforts to move humanities journal literature on-line; and Columbia International Affairs Online is a dynamic forum for research and discussion across many disciplines. On a larger scale, the American Council of Learned Societies, with its History E-Book Project, and the American Historical Association, with its Gutenberg-e Project, are encouraging historians to discuss, plan, and write electronic books.

In simplest terms, the challenge confronting scholars in the humanities and social sciences is to continue the momentum that these steps exemplify—and in so doing, to help build a broader base of public support for their scholarly quests.

Making money has never been the primary goal of scholarly pursuit in any discipline. Even those fields engaged in the production of practical, remunerative knowledge have a central mission of bettering society through their work. Research and scholarship are activities inherently in need of subsidy, and market success can never be the sole measure of value in scholarly publication. But it is money that brings ideas to fruition, and the humanities and social sciences have not enjoyed the levels of financial support that would allow them to develop and sustain innovative ideas on a major scale. What is needed in part is a greater societal recognition of the value of the humanities and social sciences, and greater financial support for the work of these fields. At the same time, scholars in these fields must engage in a focused effort to increase the number of those who understand and affirm that their lives are positively affected by the work of the humanities and social sciences.

In practical terms, what is required of these disciplines is the reaffirmation of the voice and means for having their scholarship cultivate a broader base of support. We believe an important component of this process is an inventive exploration of the possibilities of digital publication—both as an augmentation to and, at times, a substitute for print publication. Scholars in the humanities and social sciences must not lose sight of the role that technology can play in reshaping the definition of research, the nature of collaboration, and the dynamics of community in higher education.

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